

**AN ORDINANCE TO AMEND THE CROSS-CONNECTION CONTROL
PROGRAM ORDINANCE**

WHEREAS, the City of Durham operates a water supply system that serves the City of Durham and certain surrounding areas;

WHEREAS, a cross-connection allowing non-potable water or other foreign substances to contaminate the municipal drinking water supply presents an imminent health hazard to both residential and non-residential users of the municipal water system and the threat of significant economic loss and possible shut down of commercial, institutional, and industrial water users; and

WHEREAS, the public cost of restoring the municipal water supply after contamination presents the possibility of a substantial financial liability; now, therefore,

BE IT ORDAINED BY THE DURHAM CITY COUNCIL:

The Durham City Code Chapter 70, Article VII. Cross-Connection Control is hereby amended by deleting existing Article VII in its entirety and by enacting the following new Article VII. Cross-Connection Control:

ARTICLE VII. CROSS-CONNECTION CONTROL

Sec. 70-578 Definitions.

For purposes of this article, the following terms shall have the meanings set forth below, unless the context clearly indicates otherwise.

Air gap: an unobstructed physical separation sufficient to prevent backflow between the free flowing end of a drinking water supply system and any other system. Physically, an approved air gap is defined as a distance that is at least twice the diameter of the supply pipe measured vertically to the overflow rim of the receiving vessel, but never less than one inch.

Approved: meeting the Standards for cross connections or certified in writing as acceptable by the Cross Connection Control Administrator, provided that such certifications cannot contradict the Standards.

Atmospheric Vacuum Breaker (AVB): a device that prevents backsiphonage by creating an atmospheric vent when there is either negative pressure or subatmospheric pressure in a water system. It includes those devices permanently attached to a hose bibb (“hose bibb vacuum breaker”).

Auxiliary intake: a piping connection or device whereby water may be secured from a source other than the City’s drinking water supply (e.g., well).

Backflow: the reversal of flow of water or other liquids, mixtures, or substances, under positive or reduced pressure in the City’s drinking water distribution system, that flows from any source other than its intended public source, or such flow in the user’s drinking water distribution system.

Backflow Permit: a document issued by the Department that authorizes a particular action or use of a particular backflow preventer or other device.

Backflow preventer: a device or method designed to prevent backflow or backsiphonage. Common categories of backflow preventers are: air gap, reduced pressure principle assembly, reduced pressure detector assembly, double check valve assembly, double check detector assembly, pressure vacuum breaker, atmospheric vacuum breaker, and hose bibb vacuum breaker.

Backpressure: a condition in which the pressure in the user’s drinking water supply system is greater than the City’s drinking water supply system pressure which can cause a reversal of the normal direction of flow.

Backsiphonage: the flowing back of used or contaminated water from a plumbing fixture or vessel into the pipe which feeds it, caused by reduced pressure in the pipe.

Certified tester: a person who meets applicable state requirements for inspecting, testing, and repairing backflow preventers and, in addition, meets City requirements, which include successful completion of a training program approved by the Director, and performance of work that meets Standards.

Containment: preventing backflow that can affect the City drinking water supply system through installation of a backflow preventer directly downstream of the water meter or other point of water service connection before any branching occurs within the user’s drinking water supply system.

Contamination: affecting the quality of drinking water supplied by the City so as to negatively impact the quality of the drinking water or present a hazard to public health.

Cross-connection or cross connection: any actual or potential connection or structural arrangement between the drinking water supply system (whether the City’s or a user’s) and a source of potential contamination.

Cross-connection control administrator: the official in the Department designated by the Director to perform certain functions with regard to administration of the City’s program for controlling cross connections and installing backflow preventers.

Department: the City’s Department of Water Management.

Director: the Director of the Department of Water Management. The Director may delegate any functions under this article to one or more designees.

Double check valve assembly or double check valve assembly preventer (each may be referred to as a DCVA): an assembly containing two single, spring-loaded, independently operating check valves with tightly closing shut-off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.

Double check detector assembly or double check detector assembly preventer (each may be referred to as a DCDA): an assembly containing two single, spring-loaded independently operating check valves with tightly closing shut-off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve and a bypass containing a water meter (reading in cubic feet).

Drinking water supply system: the piping that distributes water meeting potable water standards and supplied by the City. If the system is on the street side of a water meter, the system is the “City drinking water supply system” and if it is on the user’s side of the water meter it is the “user’s drinking water supply system.”

Dual check valve device: a device that contains two spring-loaded, independently operating check valves in series, without tightly closing shut off valves and test cocks. These are generally used immediately downstream of the City water meter as a containment device.

Fire line: a system of pipes and equipment for a fire system. A system of pipes and equipment used to supply water in an emergency for extinguishing fire.

Isolation: isolating a localized hazard at the point of use from the drinking water system so that it does not affect the remainder of the internal drinking water system.

Plumbing permit shall have the same meaning as it has in the North Carolina State Building Code.

Pressure vacuum breaker (PVB): a device containing an independently operating spring-loaded check valve and an independently operating spring-loaded air inlet valve located on the discharge side of the check valve. The device includes properly located test cocks for testing the proper operation of the check valve and air inlet as well as tightly closing shut-off valves located at each end of the assembly.

Reduced pressure principle assembly (RPZ): an assembly containing two spring-loaded independently operating check valves, with an automatically operating pressure differential relief valve located between the two check valves, plus tightly closing shut off valves on each side of the check valves, and properly located test cocks for testing the check valves.

Reduced pressure detector assembly (RPDA): an assembly containing two spring-loaded independently operating check valves, with an automatically operating pressure differential relief valve located between the two check valves, plus tightly closing shut off valves on each side of the check valves, and properly located test cocks for testing the check valves.

Standards: those written requirements issued and maintained by the Department that meet, at a minimum, the requirements of law. The Standards shall be maintained in a document available in paper and online which may bear any title, including “manual,” “requirements,” or “guidelines.”

User: any Person that occupies or owns property that receives water from the City drinking water system, whether or not the property is located within the City limits.

Sec. 70-579. State and Federal Requirements; Implementation of program; Standards

(a) *State and Federal Law.* The City has established and will maintain a program to control potential sources of contamination of drinking water from cross connections.

The program shall, at a minimum, comply with the Federal Safe Drinking Water Act, the North Carolina Drinking Water Act, the North Carolina State Building Code, and regulations issued thereunder. The requirements of those laws and implementing regulations are incorporated into this article as minimum requirements.

(b) *Administration.* The City program shall address both containment and isolation of potential contamination resulting from cross connections. It shall be administered by the Department. The Director shall appoint a Cross Connection Control administrator who, along with the Director, is authorized to interpret this article and the Standards, and enforce the program.

(c) *Standards; approved backflow preventers.* The Department shall promulgate Standards that promote the containment and isolation of potential contamination caused by cross connections. The Standards shall be considered requirements of this Article and are incorporated herein. Among other things, the Standards shall set forth the types of backflow preventers, and manufacturers and models that are approved for control of backflow from different types of cross connections. Backflow preventers addressed in the Standards shall include: air gap, reduced pressure principle assembly, reduced pressure detector assembly, double check valve assembly, double check detector assembly, pressure vacuum breaker, atmospheric vacuum breaker, and hose bibb vacuum breaker. The Standards may also address all other activities necessary for operation of the City program, including installation, maintenance, testing, repair, and permitting of backflow preventers; permitting of other activities; and qualifications of Certified Testers.

Sec. 70-580. Regulation of contamination and cross connections; installation of backflow preventers

No user shall allow contamination of the drinking water system. No user shall allow the creation or use of a cross connection that is prohibited under this Article. Users shall eliminate all unprotected cross connections that are prohibited under this Article. Users shall install one or more approved backflow preventers for those cross connections requiring such backflow preventers under this article or within the time frames established under the Standards. The user shall bear all responsibility and cost for the installation, testing, maintenance, repair, inspection, permitting, and replacement of backflow preventers required under this article and for all associated plumbing work.

Sec. 70-581. New Residential and Nonresidential Water Connections

Users that construct any residential or nonresidential building of any type shall include an approved backflow preventer of the type specified in the Standards near the point of connection to the City drinking water supply system, as set forth under the Standards. Building plans for residential and nonresidential buildings that show the locations of plumbing connections, cross connections, and uses within each building shall be submitted to the cross connection control administrator and approved backflow preventers shall be installed as required under Standards. The City may refuse water

service and/or issuance of a certificate of compliance in the absence of compliance with these requirements, in addition to other remedies.

Sec. 70-582. Other Cross Connections

Cross connections with the City drinking water supply system not occurring at the point of water service or metering, and cross connections internal to the user's drinking water supply system, require backflow preventers. These cross connections and the approved backflow preventers for these cross connections shall be described in the Standards.

Sec. 70-583. Inspections; Interference

The Cross Connection Control Administrator and City employees designated as inspectors shall inspect properties served by the City water supply system on such schedule as set by the Administrator. As a condition of continuing water service, the inspectors shall have the right to enter at any reasonable time any property connected to the City drinking water supply system for the purpose of performing the duties of this article. Refusal of entry may result in termination of water service. No person shall interfere with an inspector in the performance of the activities authorized by this article.

Sec. 70-584. Installation; Permits.

Installation of backflow preventers shall be by Persons with the appropriate licenses as required by the North Carolina State Building Code. The Department may require permits for the installation, initial testing, and retesting of backflow preventers required under this article.

Sec. 70-585. Hazardous Connections and Uses

Any connection or use identified in the Standards as requiring a backflow preventer is deemed hazardous. Any person that installs, repairs, or inspects any plumbing line that serves a hazardous connection or that serves a facility that is not equipped with required backflow preventers, shall immediately notify the Cross Connection Control Administrator of such connections and uses. Any User that occupies or owns property in which there is a plumbing line that serves a hazardous connection, or that serves a facility that is not equipped with required backflow preventers, shall immediately notify the Cross Connection Control Administrator of such connections and uses. Users shall comply with the requirements of this article regardless of whether the connection or facility pre-existed the requirements of this article.

Sec. 70-586. Inspection and Testing of Backflow Devices

(a) *Annual Testing.* A user or permit-holder shall have all permitted backflow preventers inspected and tested annually on such schedule as may be required by the Standards. The test shall be conducted by a Certified Tester. The Certified Tester, or the

User if the Certified Tester fails to do so, shall report the results of the test to the Cross Connection Control Administrator within 15 days of testing.

(b) *Other Testing.* Inspection and testing shall be conducted after installation or repair of any backflow preventer. Any Person that installs, removes, or repairs a backflow preventer shall report such action to the Cross Connection Control Administrator within 15 days of the action and the Cross Connection Control Administrator shall inform that Person if additional inspection or testing is required. If the person who conducted the work fails to make such report within 20 days of the inspection or testing, the User shall report this information to the Administrator.

Sec. 70-587. Certification and Qualification of Testers

(a) *Certification; Other Qualifications.* Testing of backflow preventers shall be approved by the Department only if performed by a Certified Tester. The Standards shall establish qualifications for Certified Testers, which shall include successful completion of a training program recognized by the Department, as well as meeting performance standards relating to compliance with this article.

(b) *Disqualification of Certified Tester.* The Department may disqualify a Certified Tester for failure to meet the qualifications established by the Department. The Department shall provide written notice to the Certified Tester, mailed to the address the Certified Tester has provided to the Department, setting forth the reasons for disqualification. Disqualification shall be effective 3 days after such mailing. The Department shall also give either fax or email notice to the Certified Tester if the tester has provided a fax or email address. The Department shall provide an opportunity for a Certified Tester who has been disqualified to obtain reconsideration by the Director or Director's designee upon written request received no later than 10 days following the effective date of disqualification.

Sec. 70-588. Notice to User of Need for Action or Violation

Upon identification of the potential for contamination or a hazard to the City drinking water supply system, or a failure to comply with any requirement of this article, the Cross Connection Control Administrator shall notify, by first-class mail, the owner of record of the property at which the potential contamination or hazard exists, of the location and nature of the potential contamination or hazard, the number of the applicable section of this article, and the order of the Cross Connection Control Administrator regarding actions to be taken. Notice shall be deemed received three days after mailing. The Cross Connection Control Administrator shall, among other things, determine if an imminent danger to the drinking water supply or to public health exists, which determination shall impact deadlines for compliance as described in Sec. 70-589 below. The Administrator may issue any follow-up orders he/she deems necessary, including orders for testing and other actions related to compliance.

Sec. 70-589. User Responsibilities

(a) *Compliance Deadlines.* A User that has received notice as described above shall comply with the order of the Cross Connection Control Administrator. If the order is to install an approved backflow preventer or remove a cross connection, and an imminent danger to the drinking water supply or to public health does not exist, the User shall take such action within 90 days from the date notification is deemed received as described in Sec. 70-588. If the Cross Connection Control Administrator has determined that an imminent danger to the drinking water supply or to public health exists the Administrator may order a shorter time for action. In cases that do not present an imminent danger or danger to public health, the Administrator may extend the time for compliance for up to an additional 90 days if compliance efforts are underway and continuing, and the existence of a hardship or special circumstances can be demonstrated. The extension shall only be valid if in writing and signed by the Administrator.

(b) *Failure to Comply.* A User that fails to comply with an Order issued by the Cross Connection Control Administrator, or with the deadlines described in subsection (a) above, shall be in violation of this article.

Sec. 70-590. Discontinuance of service for violations.

(a) *Procedure.* The Department may discontinue water service to any structure or parcel for a violation of this article. Prior to discontinuing water service, the Director will give written notice to the customer as shown on the revenue billing roll and to the owner, occupant, or other person in apparent control of the structure or parcel. The Director is not required to provide written notice prior to discontinuing irrigation water service.

(b) *Service restoration.* When service is discontinued as described in subsection (a), it shall not be reinstituted until the Cross Connection Control Administrator determines that appropriate steps have been taken to comply with this Article and alleviate any risk to the drinking water system. Prior to restoration, all fees required by the Department for restoration of water service shall be paid, in addition to any final civil penalties assessed as described in Sec. 70-591.

(c) *No liability.* The city shall bear no liability for damage resulting from the discontinuance of service pursuant to this section.

Sec. 70-591. Violation of article.

(a) *Violation.* A person who fails to comply with this article, or with any order, certificate, or permit issued hereunder, or who installs or alters a plumbing system in nonconformance with approved specifications or plans that address cross connections or backflow preventers regulated under this article, shall be in violation of this article.

(b) *Inspection and Testing by City.* The City may inspect and test any backflow preventer where an approved inspection or testing has not been performed as required

under this article, written notice has been given to the User, and the User has not provided the approved inspection or testing within the deadline provided in the notice. The City fee for City inspection and testing, plus \$100, may be added to the User's utility bill.

(c) *Civil penalty.*

(1) *Maximum.* A person in violation of this article is subject to a civil penalty which may be recovered by the city in a civil action in the nature of debt if the violator does not pay the penalty within 30 days after the assessment has become final by exhaustion of the appeal process established by this section, or by failure to appeal the assessment. The civil penalty for a non-willful violation shall not exceed \$250.00 per day for each day of violation, or a cumulative penalty of \$5,000.00. The civil penalty for a willful violation shall not exceed \$500.00 per day for each day of a violation, or a cumulative penalty of \$10,000.00.

(2) *Factors in setting penalty.* Any civil penalty shall be assessed by the Director and, at a minimum, shall take into account the factors identified in § 70-343(b). The Director is authorized to reduce civil penalties previously assessed if compliance has been achieved and reduction appears justified as determined in the discretion of the Director.

(3) *Notice to Violator.* The Director shall send a violator written notice of the civil penalty and the basis of the amount assessed by certified mail, return receipt requested, and by first class mail. Such notice shall be deemed received three days from the time it is mailed.

(4) *Appeal.* A violator may appeal a violation by mailing a written appeal to the City Manager, including all arguments that support reducing or eliminating the penalty. The appeal must be received within 18 days of the date notice of the penalty is deemed received pursuant to subsection (3) above. An appeal mailed by first-class mail shall be deemed received three days from the time it is mailed. The Manager or his/her designee shall review the written appeal and penalty and make a final determination which shall be sent to the violator in accordance with subsection (3) above.

(5) *Penalties Added to Utility Bill.* A civil penalty that has become final pursuant to subsection (1) may be added to a User's water bill, and water service may be terminated for nonpayment.

Sec. 70-592. No City Liability.

The provisions of this article shall not create any liability in the City for failure to detect any cross connection, malfunctioning backflow preventer, hazard, or contamination of the drinking water supply.

Sec. 70-593. Fees.

Fees for the activities authorized under this article, including fees for manuals, permits, City inspections, City reinspections, City testing, training classes, and certifications of testers will be established by the City.

Secs. 70-594—70-629. Reserved.